

TEAC[®]

A-1030

STEREO TAPE DECK
SERVICE MANUAL

ALSO APPLICABLE FOR MODELS

A-1300



TEAC CORPORATION

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GENERAL DESCRIPTION

The TEAC A-1030 employs a precision built combination Erase/Record head plus an independent playback head thus providing all the operating functions of a three head machine. Independent record and playback amplifiers incorporate the latest professional circuitry. The A-1030 is a single motor tape deck utilizing a two speed hysteresis synchronous motor coupled to an efficient belt drive system. Carefully constructed to provide high performance, convenience of operation and optimum tape handling capability, the TEAC A-1030 is highly recommended for use with high quality audio systems.

This manual is designed to assist the service engineer by providing adjustment and alignment instructions and care and maintenance procedures. It also outlines the method to be followed when ordering needed repair parts.

Should you encounter difficulty in accomplishing any of the alignments or adjustments or should you have questions concerning methods or procedures, please contact the nearest TEAC Dealer, Service Center, the TEAC Corporation or affiliated Corporations.

SERVICE DATA

MECHANICAL

Heads: Two, 4 track 2 channel stereophonic.
Combination head, erase/record $\times 1$:
Erase section,
1.8k Ω /100kHz, erase current approx. 35mA/100kHz
Record section,
105 Ω /1kHz, bias current approx. 2mA/100kHz
recording current approx. 130 μ A/400Hz
Playback Head $\times 1$: 1.8k Ω /1kHz -63dB/400Hz

Tape Width: Standard 1/4 inch tape

Reel: 7 inch max.

Tape Speed: 3-3/4ips and 7-1/2ips($\pm 0.5\%$)

Motor: Single motor, dual speed hysteresis synchronous

Wow and Flutter: 0.20% at 7-1/2ips
0.25% at 3-3/4ips
Wow and flutter measured according to weighted
NAB standard using TEAC flutter free tape.

Fast Winding Time: Approx. 210 seconds or less for 1,200 feet.

Operating Position: Horizontal or vertical

Power Requirements: 100/117/200/220/240V AC 50/60Hz 75W

Weight: 28-3/8 lbs(net.)

ELECTRICAL

Transistors: Twenty-two: 2SC644(T) $\times 8$ 2SC828(T) $\times 8$
2SC828(R) $\times 2$ 2SA666I(S) $\times 2$
2SC971(YBL) $\times 2$

Silicon Stack: SIB02-01 $\times 1$

Silicon Diode: FR2-06 $\times 1$

Frequency Response: Refer to Frequency Response Limit Chart.

Equalization: 7-1/2ips 50 μ sec. 3-3/4ips 90 μ sec.

Min. Input: MIC : 0.25mV/600 Ω , -72dB
LINE: 0.1V/50k Ω , -18dB

Max. Output: LINE: 0.3V/10k Ω or more -2dB
HEADPHONE: 0.3mW/8 Ω -24dB

Bias Frequency: 100kHz push-pull oscillator

Signal to Noise Ratio: 48dB or more at 7-1/2ips
45dB or more at 3-3/4ips
Peak record level to unweighted noise.

Crosstalk Rejection: Channel to channel at 1kHz/45dB or more
Adjacent track at 100Hz/35dB or more

Erase Efficiency: 70dB or more at 7-1/2ips.

Specifications and components subject to change without notice.

DISASSEMBLY

NOTE

To remove unit from the case, the control lever, the face plate, head assembly and pinch roller must first be removed.

Head Assembly Removal

Loosen thumb screws in head assy cover plate, lift plate exposing two phillips screws, remove screws and pull off the head assembly.

IMPORTANT

After removal of the head assembly be sure to visually check the head alignment.

Pinch Roller

- Remove pinch roller retaining screw, lift off pinch roller and pinch roller cover.

Control Lever

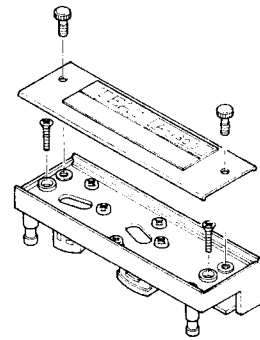
- Remove two set screws from control lever, pull lever from shaft.

Face Plate Removal

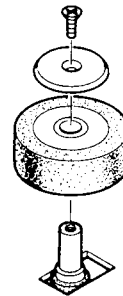
- Remove 3 screws at bottom of face plate, carefully lift face plate from transport.

Cabinet Removal

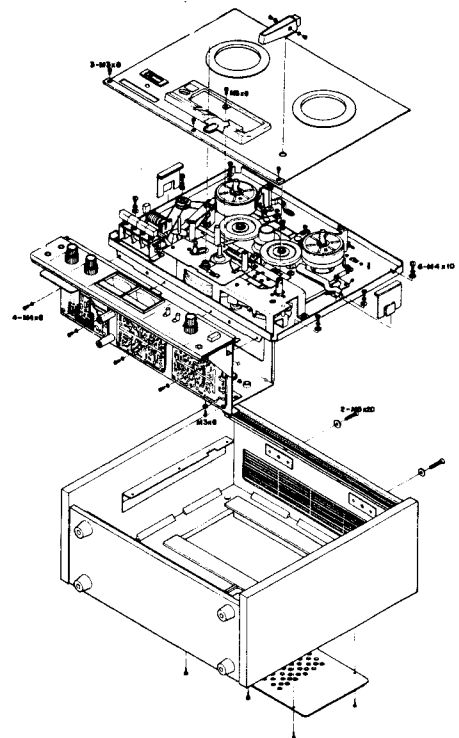
- Remove six screws securing the chassis to the side brackets, (refer to exploded view). Remove the two screws top of case.
- Carefully lift chassis from case.



Head Assembly

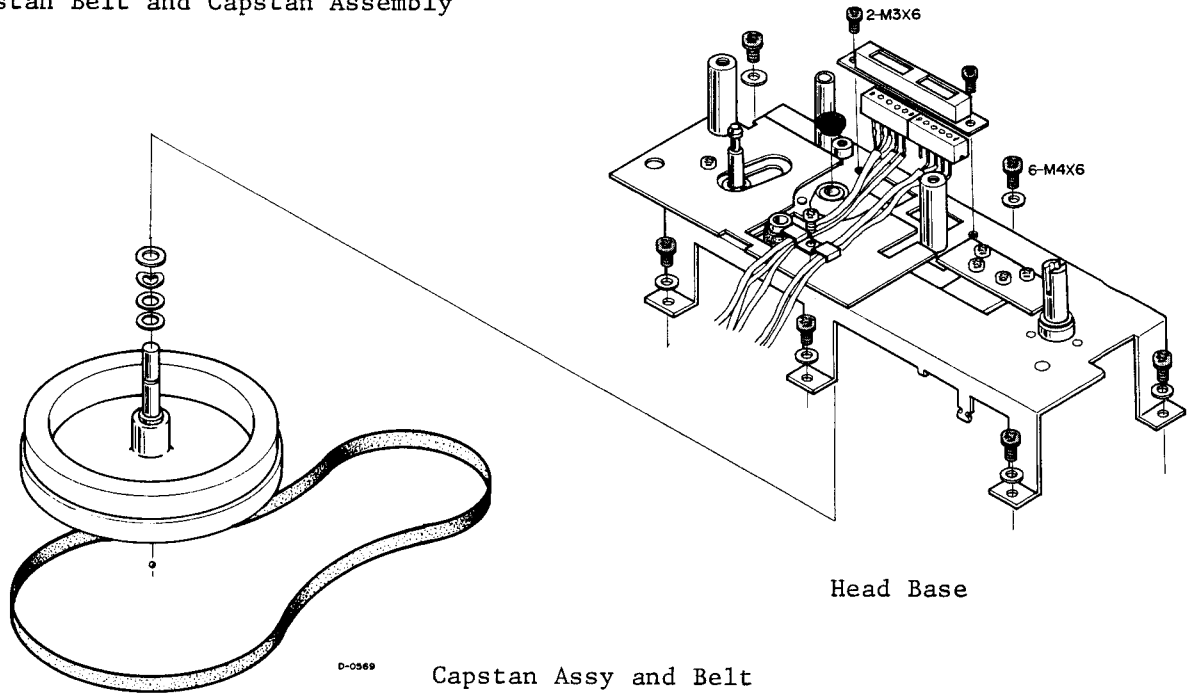


Pinch Roller



Face Plate and Cabinet

Capstan Belt and Capstan Assembly



CAPSTAN BELT AND CAPSTAN ASSEMBLY

- First, remove the control lever and pinch roller.
- Remove the rubber dust guard from capstan shaft.
- Remove the head connector cover by removing two(M3 × 6) screws.
- Remove one screw holding the head cable clamp
- Remove the six screws holding head base.
- Gently lift the head base away from main chassis.

NOTE

Extreme care must be taken not to damage the mechanism or wiring when moving the head base.

CAPSTAN BELT

- Slide belt from capstan pulley and drive pulley.
Remove belt.

CAPSTAN ASSEMBLY

- Grasp the defective capstan by the shaft and lift it out of the swivel type bearing.
- To reinstall capstan assembly, reverse above procedures.

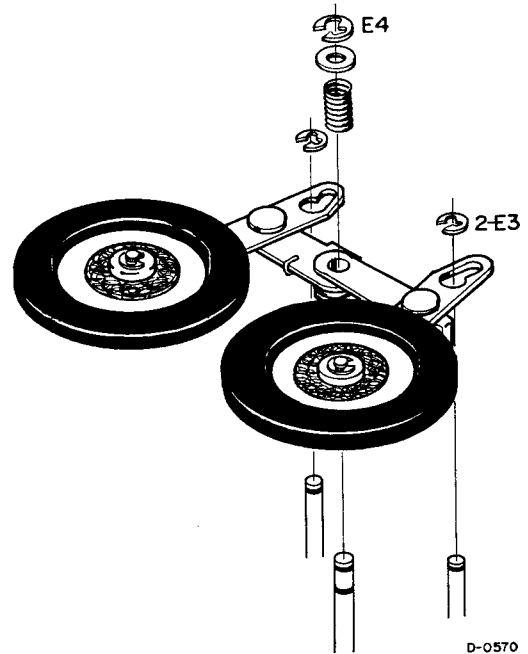
NOTE

A clearance of 0.05~0.3mm must be maintained between the capstan shaft and capstan thrust plate.

IDLERS

Close tolerances in the idler assembly require that it be replaced as a unit.

To remove the idler assembly, unsnap the E clips from each of the three retaining shafts. Do not allow compressed spring on center retaining shaft to escape.



Idler

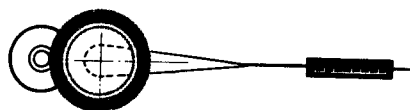
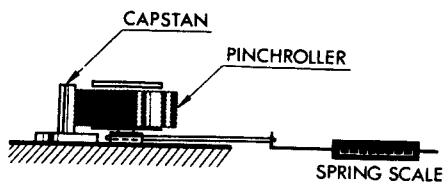
ADJUSTMENT AND MEASUREMENTS

-MECHANICAL-

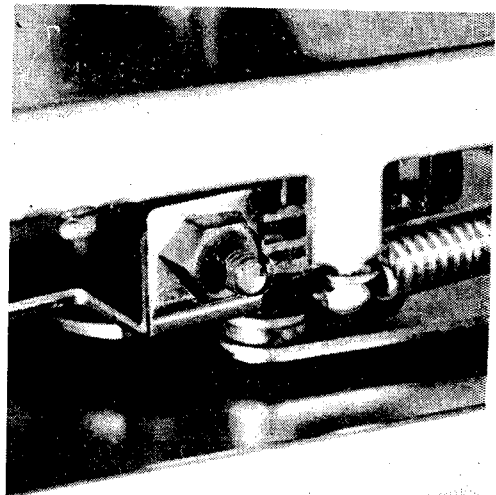
The TEAC A-1030 employs a well designed single motor, belt driven system and should require a minimum of mechanical maintenance or adjustments.

PINCH ROLLER PRESSURE

- Connect a spring scale to pinch roller shaft as shown in the illustration.
- Place control lever in the play position with power applied.
- Pull the spring scale away from the capstan shaft.
- Note the reading on the spring scale at the instant the pinch roller stops rotating, the reading should be 1.8~2.0 kg.
- If pressure is outside the above limits, using a 4mm nut driver, adjust the nut at the lower right side of the transport mechanism (see illustration) for optimum pressure.
- After adjustment, secure the nut with LOCTITE.



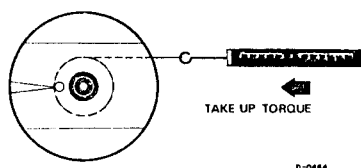
Pressure Measurement



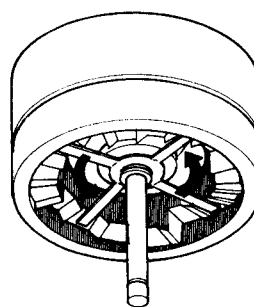
Adjustable Location

TAKE-UP TORQUE

- Place the empty reel (RE-702) and spring scale on right reel as illustrated.
- Set power switch on and place the control lever in play mode.
- Allow the rotation of the reel to slowly draw the scale toward the hub. The spring scale should read $170 \pm 10\text{g-cm}$.
- If adjustment is required, it can be made by rotating the spring arms on the stepped bottom drum. (Each step represents approx. 10g-cm .)



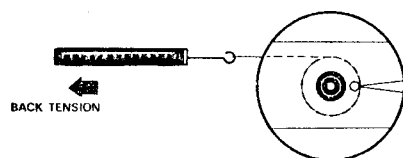
Torque Measurement



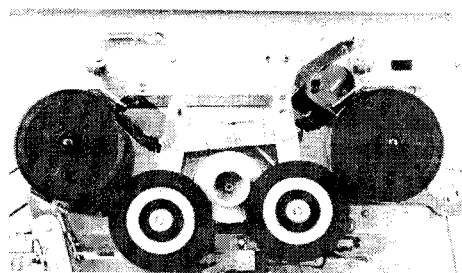
Torque Adjustment

BACK TENSION -FAST WINDING-

- Place the empty reel (RE-702) and spring scale on left reel turntable as illustrated.
- Place the control lever to fast forward mode.
- Pull the spring scale in a counter clockwise direction. The reading should be $55 \pm 10\text{g-cm}$.
- If not adjust by bending the flat spring arms (back brake plate) which press the square felt-pads, against reel drum. See fig. below.
- To adjust the right reel back tension repeat the previous step with the exception that all directions of rotation are clockwise and the control lever is in the rewind mode.



Torque Measurement



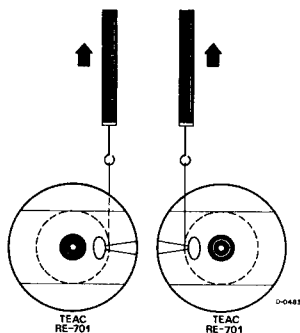
Torque Adjustment

BRAKE TORQUE

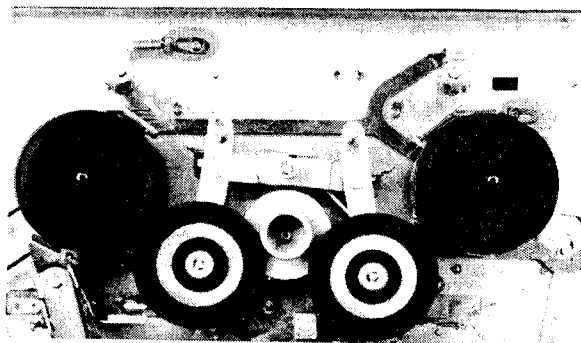
NOTE

The brake adjustments must be performed with the control lever in "STOP" position and no power is required.

- Place the empty reel (RE-701) and spring scale on the reel as shown in figure.
- Pull the scale away from the reel, the scale reading should be $900 \pm 100\text{g-cm}$. If adjustment is required, loosen the screw holding the brake spring retainer and move it backward or forward.
- After brake torque adjustment, the loosened screws must be re-secured with LOCTITE.



Torque Measurement

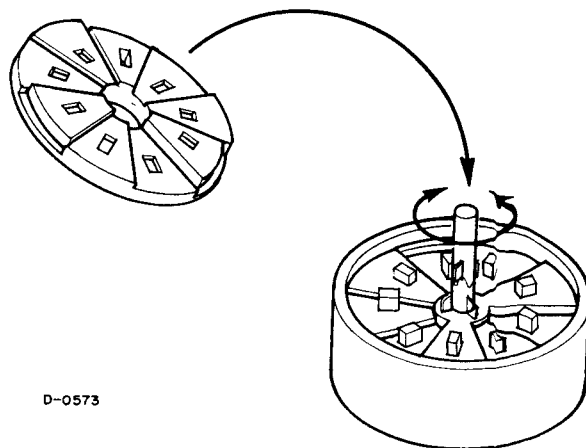


Torque Adjustment

REEL HEIGHT ADJUSTMENT PROCEDURES

To change reel height, remove the rubber insert from the reel turntable. Three positions of compensation are provided, M, H, and L. Reinsert the rubber mat so that the desired letter shows in the cutout portion.

M - Medium H - High L - Low



D-0573

Reel Height Adjustment

TENSION SERVO LOOP

The left tension arm is coupled to the tension servo loop and applies varying friction to the supply reel brake drum. The result is to maintain tape tension at a constant level despite the change of diameter at the supply reel in playback or record mode.

As tension varies, the tension arm will move either left or right, back tension on the supply reel will be varied according to the direction of movement. The tension arm at the extreme left position will result in max. friction being applied to the supply reel brake drum, this in turn will increase the tape tension tending to move the tension arm back to the right thus maintaining optimum overall tension.

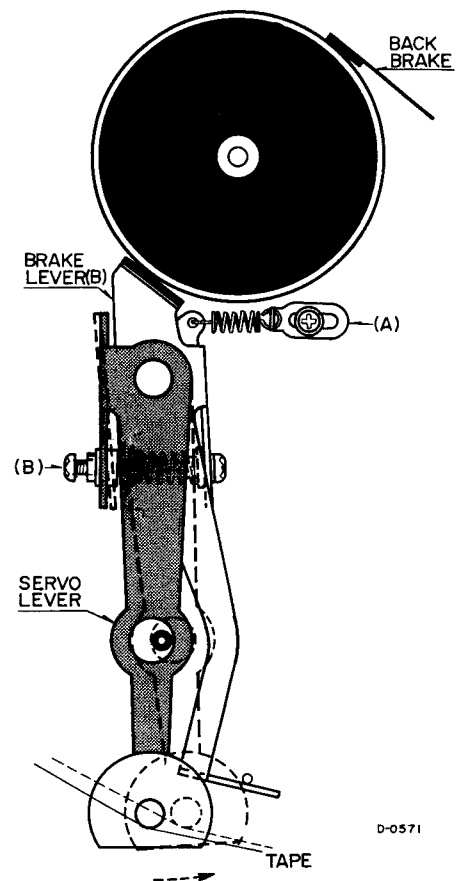
If servo loop tension is adjusted, the constant back tension must also be readjusted as a constant level of back tension is always applied to the supply reel in addition to that controlled by the tension servo loop.

IMPORTANT

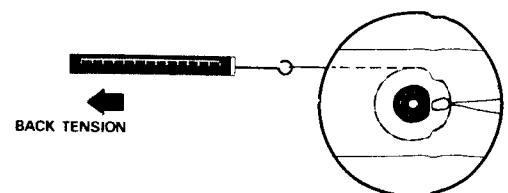
This tension servo tension adjustment should be made after the back tension is adjusted.

MAXIMUM BACK TENSION

- Apply power to the unit.
- Place the empty reel (RE-702) and spring scale on the left reel table as shown in figure.
- Place the control lever to play mode.
- Pull the scale away from the reel, the scale reading should be $350 \pm 100\text{g-cm}$.
- If tension is not within the specified limit adjustment can be made by loosened securing screw (A) and moving the spring hook (back lever spring hook). Then the securing screw is tightened.



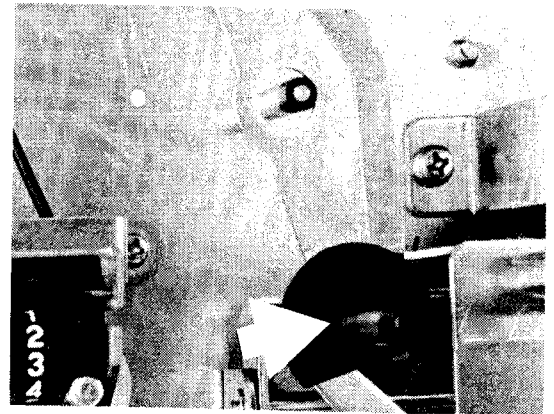
Tension Servo Loop



Tension Measurement

Minimum Back Tension

- With rubber band, hold tension arm in full right position.
- Place the control lever to play mode. The reading should be $80 \pm_{0}^{30}$ g-cm.
- If it is not within limits, adjustment can be done by turning the screw which changes spring force (B).
- Apply a drop of LOCTITE to adjusting screw.



Tension Arm

SOLENOID POSITIONING

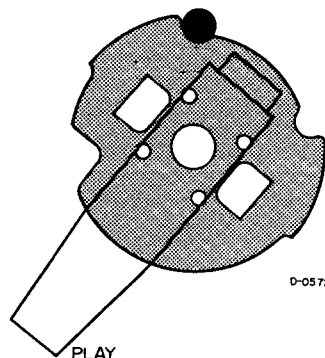
- Apply power to the unit.
- Place control lever in PLAY mode.
- Loosen the two solenoid retaining screws.
- Slide solenoid housing back or forth until plunger just bottoms in solenoid.
- Make certain that roller fully engages the cam detent when solenoid plunger is fully bottomed.
- Retighten solenoid positioning screws.

NOTE

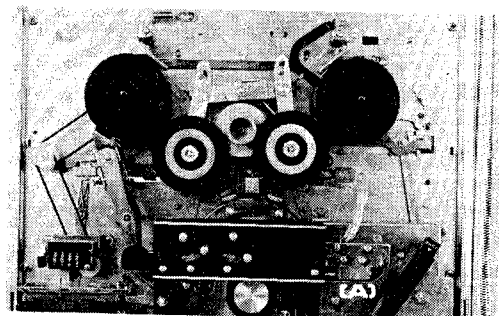
Since the cam roller is connected to the solenoid, the control lever will not stay in PLAY position unless power is applied to the deck.

PRECAUTION

These adjustment are carefully made at the factory. Readjustment should only be required after many hours of operation or after component replacement.



Cam Detent



Adjustable Location

HEAD MECHANICAL ALIGNMENT

COMBINATION HEAD

-Erase Section-

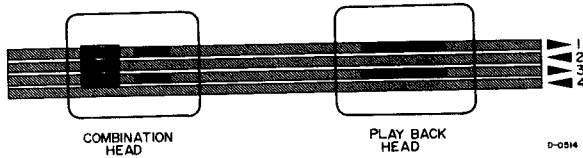
The erase head pole should be above the edge of a threaded tape by the width of heavy pencil line.

-Record Section-

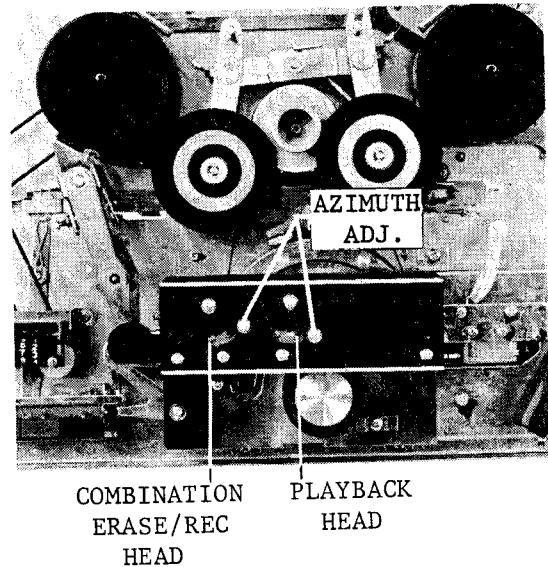
The record head pole should be above the edge of a threaded tape by the width of a thin pencil line.

PLAYBACK HEAD

The pole of the playback head should be even with the top of a threaded tape.



HEAD ALIGNMENT



PREVENTIVE MAINTENANCE

LUBRICATION

Self lubricating materials are extensively used in the manufacture of the A-1030. Therefore under ordinary home use, lubrication will not ordinarily be required. If unit is under continuous use as in commercial applications the motor should be oiled using TEAC TZ 255 oil, semi annually or at each 2,000 hours of use.

Apply approximately 1 cc of oil to each motor oil tube. Apply oil immediately after use while motor is still warm. After oiling, leave deck in horizontal position for several hours until motor has cooled and oil is thoroughly absorbed.

CLEANING

No internal cleaning or maintenance is required except as noted above. To maintain playback quality and insure smooth operation the head and tape path components should be periodically cleaned using TEAC TZ 261 A·B cleaning fluids.

Using a stiff cotton swab moistened with TZ 261 "A" head cleaning fluid, thoroughly clean the head surfaces, capstan shaft, tape guides, tape lifters and all surfaces in contact with the moving tape. Clean the pinch roller with TZ 261 "B" rubber cleaning fluid.

PERIODIC MAINTENANCE

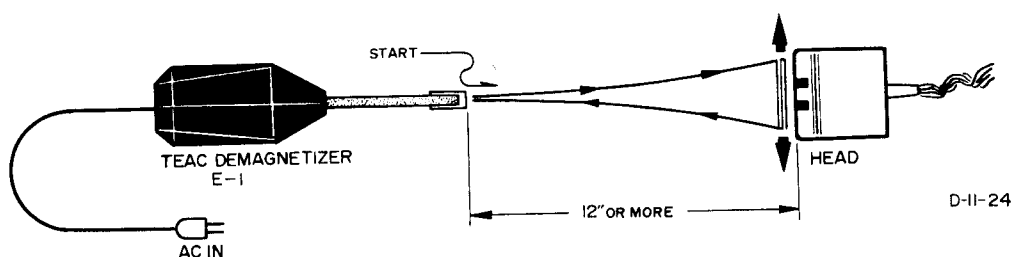
USER MAINTENANCE	INTERVAL	MATERIAL REQUIRED
Head demagnetization	Every 50 hours or before important recording sessions	TEAC E-1 Demagnetizer
Tape path cleaning	Every 8 hours of playback operation	TEAC TZ 261A
Clean: Capstan shaft Tape lifters Heads Pinch roller		TEAC TZ 261A TEAC TZ 261A TEAC TZ 261A TEAC TZ 261B
Motor lubrication	Annually	TEAC TZ 262 or TZ 265

Internal service and cleaning of the capstan pulley, idlers, flywheel, capstan belt and take-up pulleys should be accomplished only by factory trained technicians during overhaul after extended periods of use.

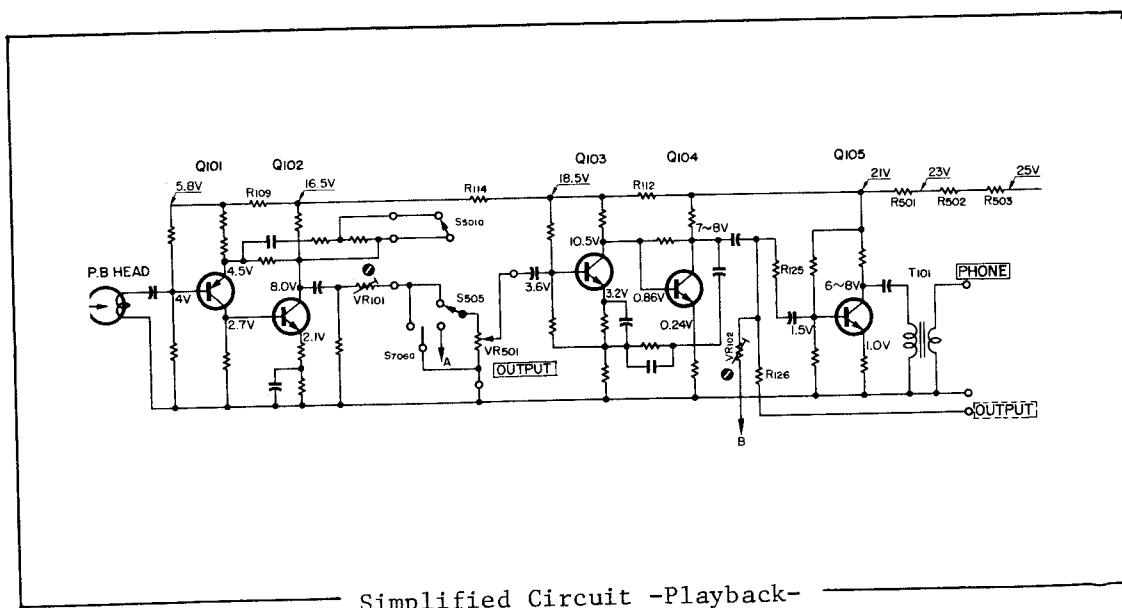
HEAD DEMAGNETIZATION

The A-1030 tape head should be periodically demagnetized to prevent loss of high frequency response. Frequency of demagnetization depends on amount of use. Under normal home use heads should be demagnetized monthly.

Using the TEAC E-1 demagnetizer, bring the demagnetizer tip close to the head playback surfaces, slowly move it up and down several times. Gradually withdraw the demagnetizer tip from the head area, turn off power to the demagnetizer only after it has been drawn at least 12 inches away from the head area.



Head Demagnetization



MEASUREMENT AND ADJUSTMENT

-ELECTRICAL-

GENERAL NOTICE

Before performing adjustment and measurement on this unit, thoroughly clean and demagnetize the entire tape path.

It is important that the unit be set to the proper voltage and frequency for your locality.

TEAC specified standard test tapes and test equipment must be used when performing maintenance to insure reliable results.

Procedures for checks and adjustments, unless otherwise indicated, are for the left channel at a tape speed of 7-1/2ips. The same procedures are to be applied to the right channel and again for both channels at 3-3/4ips.

All controls mentioned in this book will be printed in capital letters and will be exactly as they appear on the unit.

Double designated symbol numbers refer to left channel/right channel.

T H D : Third Harmonic Distortion.

Value of signal level dB in the text is rms to 0 dB = 0.775V

PLAYBACK HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

1. Connect a level meter to either OUTPUT jack.
2. Thread a TEAC test tape YTT-1003 on the unit.
3. Play the 15 kHz test tone in section 2 of the test tape.
4. Slowly rotate the azimuth screw until maximum indication is obtained on the level meter.

Fine Adjustment

CAUTION

After coarse adjustment, do not make large corrections, turn Azimuth screw 1/4 turn or less.

5. It is absolutely essential to accomplish the coarse adjustment before using this method to avoid phase errors larger than 45°
6. Connect the test equipment as shown in the figure.
7. Play a 10 kHz signal and adjust the azimuth screw until the oscilloscope shows that the signals are less than 45° in phase.
8. Secure the azimuth screw with a drop of LOCTITE.

MAXIMUM OUTPUT LEVEL SET

9. Play the 400 Hz tone in section 1 of the test tape.

NOTE

This tone is recorded at operating reference level.

10. Adjust VR 101/201 for -2 dB on the level meter, with OUTPUT controls fully clockwise.

SPECIFIED OUTPUT LEVEL SET

NOTE

Connect a 10 kohm load to the LINE OUT jacks when not using the TEAC M-826A level meter.

11. Play the 400 Hz tone in section 1 of the test tape.
12. Turn the OUTPUT controls for -8 dB reading on level meter.

IMPORTANT

This is the specified output level set. Do not disturb this setting until the remaining adjustments have been completed.

VU METER CALIBRATION -PLAYBACK-

13. While playing the 400 Hz tone(1% THD) in section 1 of the test tape, adjust VR 102/202 for reading of 0 VU on the VU meter.

FREQUENCY RESPONSE

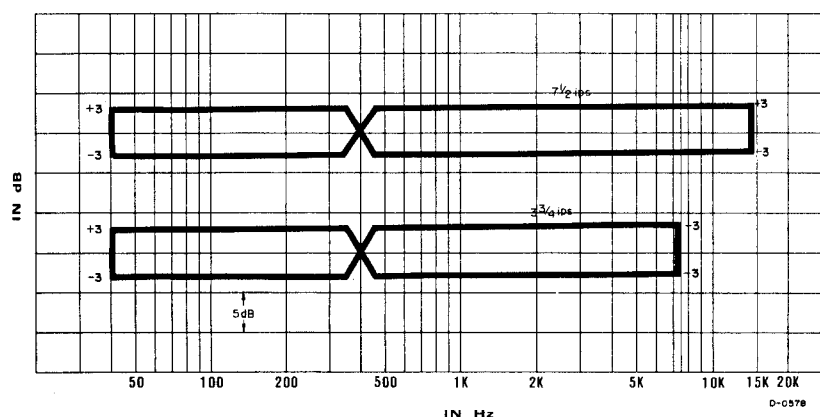
14. Play the test tones from 15 kHz down to 40 Hz.
(Recorded at 10 dB below operating reference level.)
15. Compare the readings obtained on the level meter with the response limits given in figure below.

NOTE

Playback equalization is provided by fixed circuitry, no adjustments are provided.

The playback frequency response of the TEAC #5066904 playback head can normally be brought within specified limits by performing minor head alignment and azimuth adjustments.

If alignment and adjustment of the playback head does not bring frequency response to the specified limits, replace the playback head.



LEVEL VARIATION

- Using Scotch 203 test tape, recorded at the specified level setting, during playback the output level variations should not exceed those shown in the below chart.

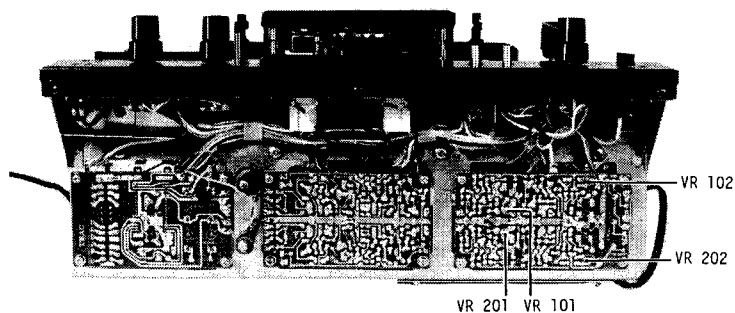
7-1/2ips: 0.5dB at 400Hz
 1.0dB at 10kHz
 3-3/4ips: 1.0dB at 5kHz

SIGNAL TO NOISE RATIO

IMPORTANT

OUTPUT control should be at specified output level.
 The values given are obtained using an unweighted level meter while the supply and take up reels are rotating.

- Thread a tape on the unit, leaving the tape outside the capstan and pinch roller.
- Place the unit in the PLAY mode (▶) (the tape will not move).
- The level meter connected to the OUTPUT jacks should indicate -58 dB or less (3-3/4ips: -56 dB or less).



Adjustable Parts Location

MONITOR PERFORMANCE

MINIMUM INPUT LEVEL CHECK

LINE Input

1. Connect an AF oscillator to the LINE IN jacks.
2. Apply a 500 Hz signal at -18 dB.
3. Place the MONITOR switch in the SOURCE position and turn the LINE controls fully clockwise.
4. The level meter should read a specified output level of -8 dB at LINE OUT jacks.

MIC Input

5. With MIC controls fully clockwise apply a 400 Hz signal at -70 ± 2 dB to the MIC IN jacks. The output should be -8 dB (specified output level).

NOTE

Input circuit requires no adjustment, only an operational check. After completing the check rotate MIC controls fully counterclockwise to eliminate noise from MIC jacks or mic preamplifiers.

SPECIFIED INPUT LEVEL SET

6. Apply a 400 Hz signal at -8 dB to the LINE IN jacks.
7. Turn the LINE controls for -8 dB at the LINE OUT jacks.

NOTE

Do not disturb the specified input level position of of these controls until the remaining checks and adjustments are completed.

NOTE

The level difference between the channels must not exceed 1 dB as indicated on the level meter. If it is not within limits, readjust VR 101/201 for same output level.

HEADPHONE OUTPUT CHECK

8. Connect an $8\Omega/1W$ resistor to HEADPHONE jack.
9. Connect the level meter across the $8\Omega/1W$ resistor.
10. With the same 400 Hz signal at -8 dB applied and the MONITOR switch in SOURCE, level meter should read -24 ± 2 dB.

RECORD PERFORMANCE

IMPORTANT

Before making any measurement and adjustments on the record amplifier, be sure that all tests in the HEAD ALIGNMENT, PLAYBACK and MONITOR performance sections have been accomplished and that all adjustments are correct.

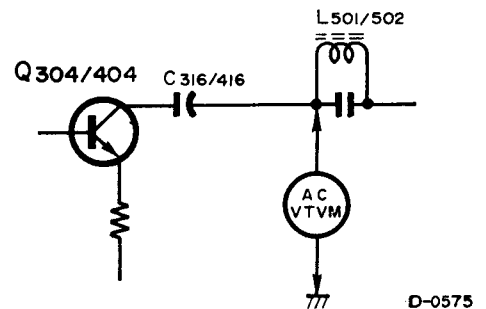
Optimum recording performance (Bias levels, recording levels and frequency response) is dependent upon tape characteristics. The TEAC A-1030 is factory set for Scotch type 203 tape. Service data is based upon the use of Scotch 203 or equivalent tape.

BIAS TRAP ADJUSTMENT

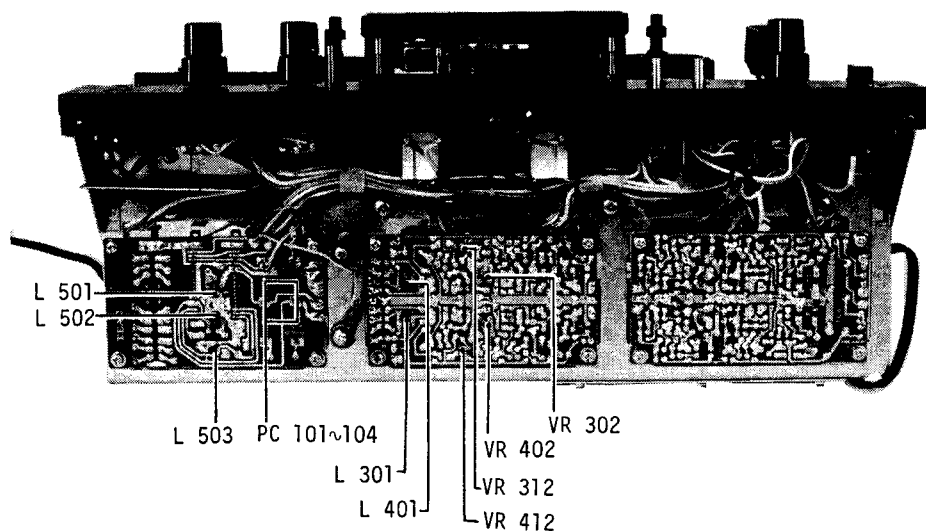
NOTE

The bias trap tank circuit keeps the bias signal from reaching the record and monitor amplifier and under normal no signal conditions, bias voltage should not be present at the LINE OUT jacks.

1. Thread a blank tape on unit.
Place the unit in the RECORD mode.
2. Connect a VTVM to the junction of L 501/502, C 316/416
3. Adjust L 501/502 for a minimum reading on VTVM.



Bias Trap Check Point



Adjustable Parts Location

RECORD HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

NOTE

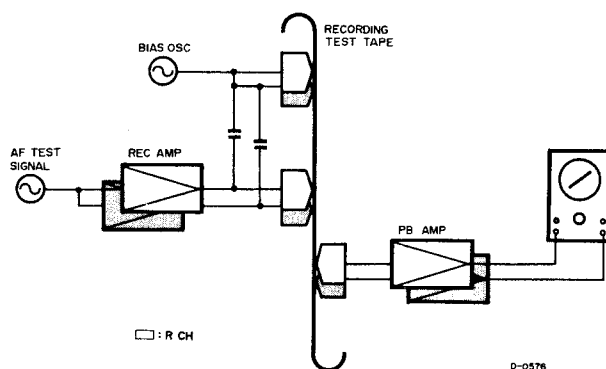
The effect of turning the azimuth screw will not immediately register on the level meter. A slight delay will be noticed. Therefore, the screw must be rotated slightly, and then pause to see the effect.

1. Connect a Level Meter to the OUTPUT jacks and an AF oscillator to the LINE IN jacks.
2. Place the MONITOR switch to SOURCE and adjust the AF oscillator to obtain a signal of 15 dB below the specified output level. (The level meter will indicate -23 dB.)
3. Make certain that the LINE control is at the specified input level position, then set the AF oscillator to 10 kHz.
4. Thread a record test tape on the unit and place it in the record mode.
5. Place the MONITOR switch in the TAPE position. Adjust azimuth while recording the 10 kHz signal on the tape.
6. Adjust the azimuth screw for maximum indication of the level meter.

Fine Adjustment

It is absolutely essential to accomplish the coarse adjustment before using this method, to avoid phase error larger than 45°

7. Connect the test equipment as shown in figure below.
8. Apply a 7.5 kHz signal at -23 dB to the LINE IN jacks and record this signal.
9. Carefully adjust the azimuth screw until the oscilloscope shows the signal to be in phase.
10. Secure the screw with a drop of LOCTITE.



Fine Adjustment Set Up

BIAS CURRENT ADJUSTMENT

Optimum bias level will vary with the inherent characteristics of the tape used. The following adjustment procedures use Scotch 203 and Scotch 150 as recording test tapes. Values arrived at with these tapes may not be optimum for tapes of other manufactures. Procedures used are common to all types of tape regardless of brand.

HIGH position

1. Thread record test tape Scotch 203 on the unit. Apply a 400 Hz/-8 dB signal to LINE IN jacks.
2. Place the BIAS switch to HIGH and place the unit in the record mode. Place the MONITOR switch in the TAPE position.
3. Adjust capacitor PC 102/104 for a peak on the level meter.
4. Turn the capacitors clockwise until a decrease of 0.5 dB is obtained.

NORMAL position

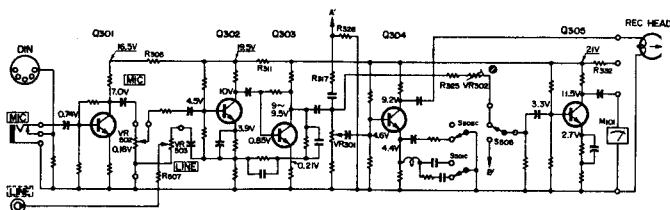
5. Thread record test tape Scotch 150 on the unit.
6. Place the bias switch to NORMAL and place the unit in the record mode.
7. The same procedures are to be applied to PC 101/103.

RECORD LEVEL SET

1. The OUTPUT controls must be at the specified output level position (-8 dB at LINE OUT jacks).
2. Apply a 400 Hz signal at -8 dB to the LINE IN jacks.
3. Thread a record test tape Scotch 203 on the unit, then set the BIAS switch to HIGH position.
4. Place the unit in the stereo record mode with the MONITOR switch in the TAPE position, monitor the record level during recording.

VU METER CALIBRATION -RECORD-

5. Adjust VR 301/401 for a reading of 0 VU on the VU meters(-8 dB at the LINE OUT jacks).



OVERALL FREQUENCY RESPONSE

No adjustment is given for this procedure.
The record fixed equalization should give the proper frequency response.

HIGH *BIAS*

IMPORTANT

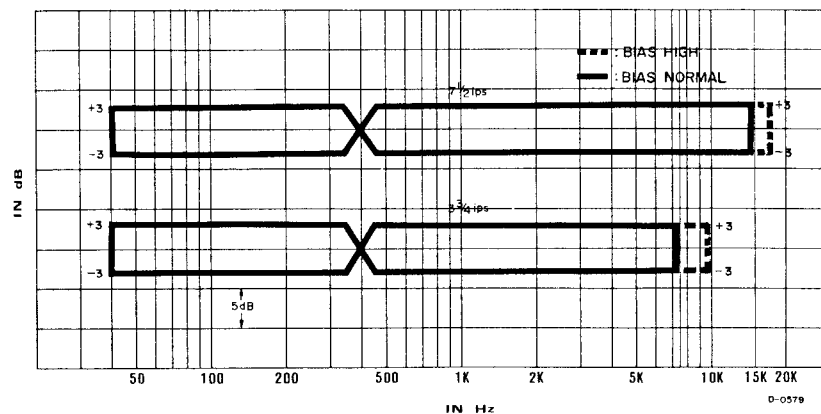
To avoid saturation of the tape, these checks should be made at least 15 dB below the specified input level.

Any bias signal feeding into the test equipment should be filtered out by adjusting the external bias trap. A broad band VTVM may be used on the output of the unit for this adjustment. Since response of TEAC M-826 falls off sharply above 20 kHz the extra bias trap is not required.

1. Adjust the AF oscillator to obtain an output level of -23 dB (approximately 15 dB below specified output level) at LINE OUT jacks.
2. Place BIAS switch in HIGH position, thread Scotch 203 tape on the unit.
3. Apply a signal swept slowly from 50 Hz to 15 kHz and record it on the test tape at 7-1/2ips.
4. Repeat the above procedure for 3-3/4ips using a signal swept from 50 Hz to 7.5 kHz. Refer to chart below for response limits.

NORMAL *BIAS*

5. Thread the Scotch 150 tape on the unit.
6. Place the BIAS switch in the NORMAL position.
7. Repeat the overall response check at both tape speeds.



Frequency Response Limits

OVERALL SIGNAL TO NOISE RATIO

IMPORTANT

Clean and demagnetize the heads before proceeding. It is extremely important that all tests described in the proceeding paragraphs have been completed and that all controls specified adjusted are left unaltered.

1. Thread a record test tape(Scotch 203) on the unit. BIAS sw to HIGH.
2. Remove the AF oscillator from the LINE IN jacks.
3. Place the unit in the RECORD mode with no signal applied.

NOTE

Noise readings, when taken while recording, may be affected by the bias signal which could be leaking through. It is therefore good practice to rewind the no signal recorded section and take the noise reading during playback.

4. Note the point on the index counter where recording begins.
5. Rewind the tape and play it back.
6. The noise level as indicated on the level meter should be -56 dB or less (3-3/4ips: -53 dB or less).

NOTE

Bias, erase and playback amplifier noise are all included in this measurement.

All frequencies between 40 Hz and 15 kHz are measured unweighted.

ERASE EFFICIENCY

NOTE

To measure erase efficiency, a 1 kHz band pass filter (TEAC M-204 CL filter) must be used.

Due to the high level of this signal, it is recommended that only a short recording be made (approximately 30 seconds) to prevent damage to the VU meter.

1. Apply a 1 kHz signal at 0 dB to the LINE IN jacks.
2. Place the unit in record mode and record this signal.
3. Rewind the recording to the beginning and remove the AF oscillator from the LINE IN jacks.
4. Place the unit in record mode and record over this portion of tape again.
5. Rewind the tape to the starting point and connect a level meter to the OUTPUT jack through the 1 kHz band pass filter.
6. Play the erased portion of the tape.
7. The level meter should indicate -62 dB or more.

EXPLODED VIEW AND PARTS LIST

MODEL A-1300

PARTS ORDERING INFORMATION

Replacement parts are available through your nearest TEAC dealer or directly from the TEAC office.

Changes are constantly being made to make TEAC products better and more reliable.

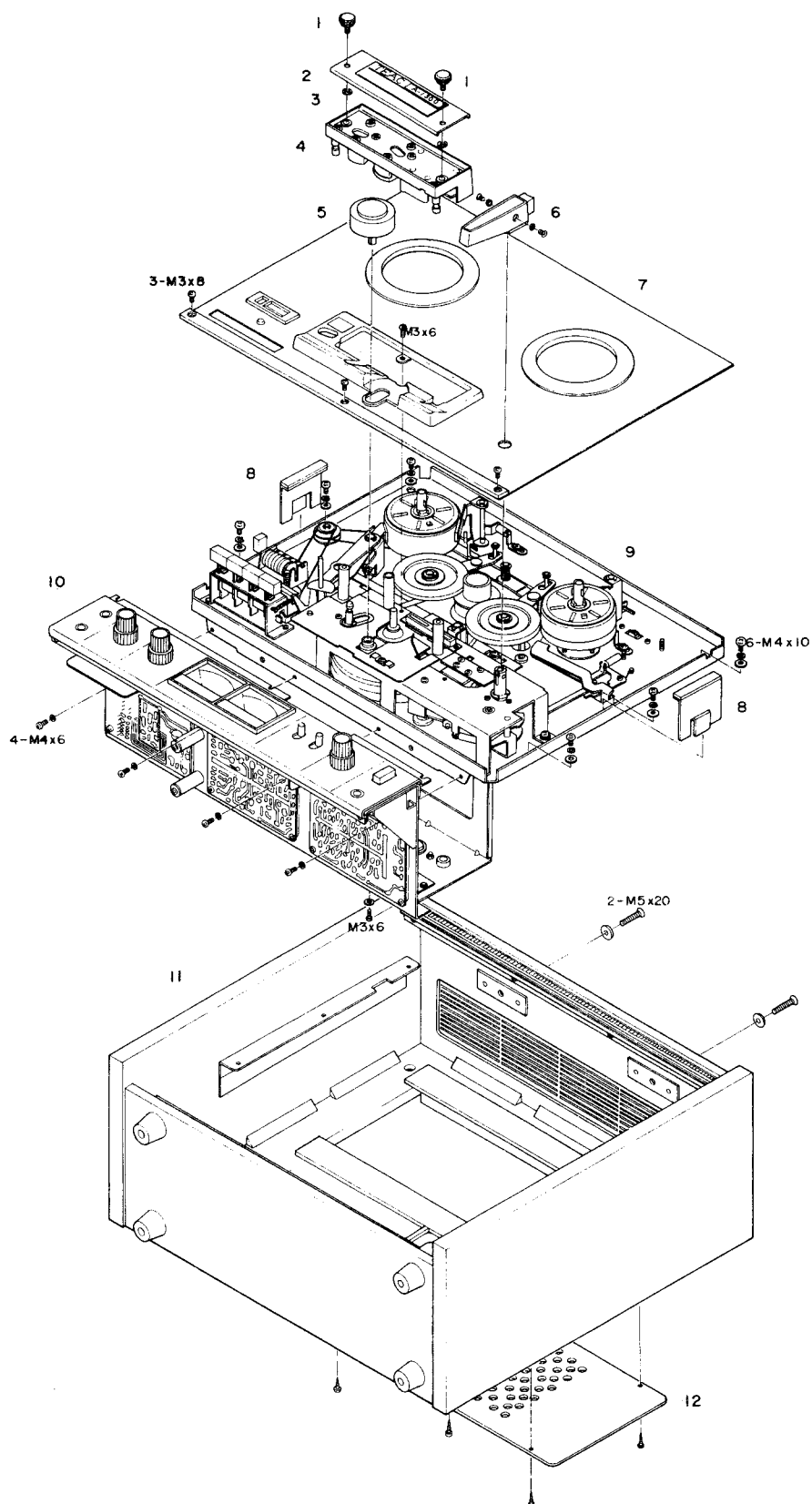
Therefore, when ordering parts, always include the following information:

<i>MODEL</i>	<i>REF.NO.</i>	<i>PARTS NO.</i>	<i>DESCRIPTION</i>
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EXPLODED VIEW

A-1300

TRIM PARTS

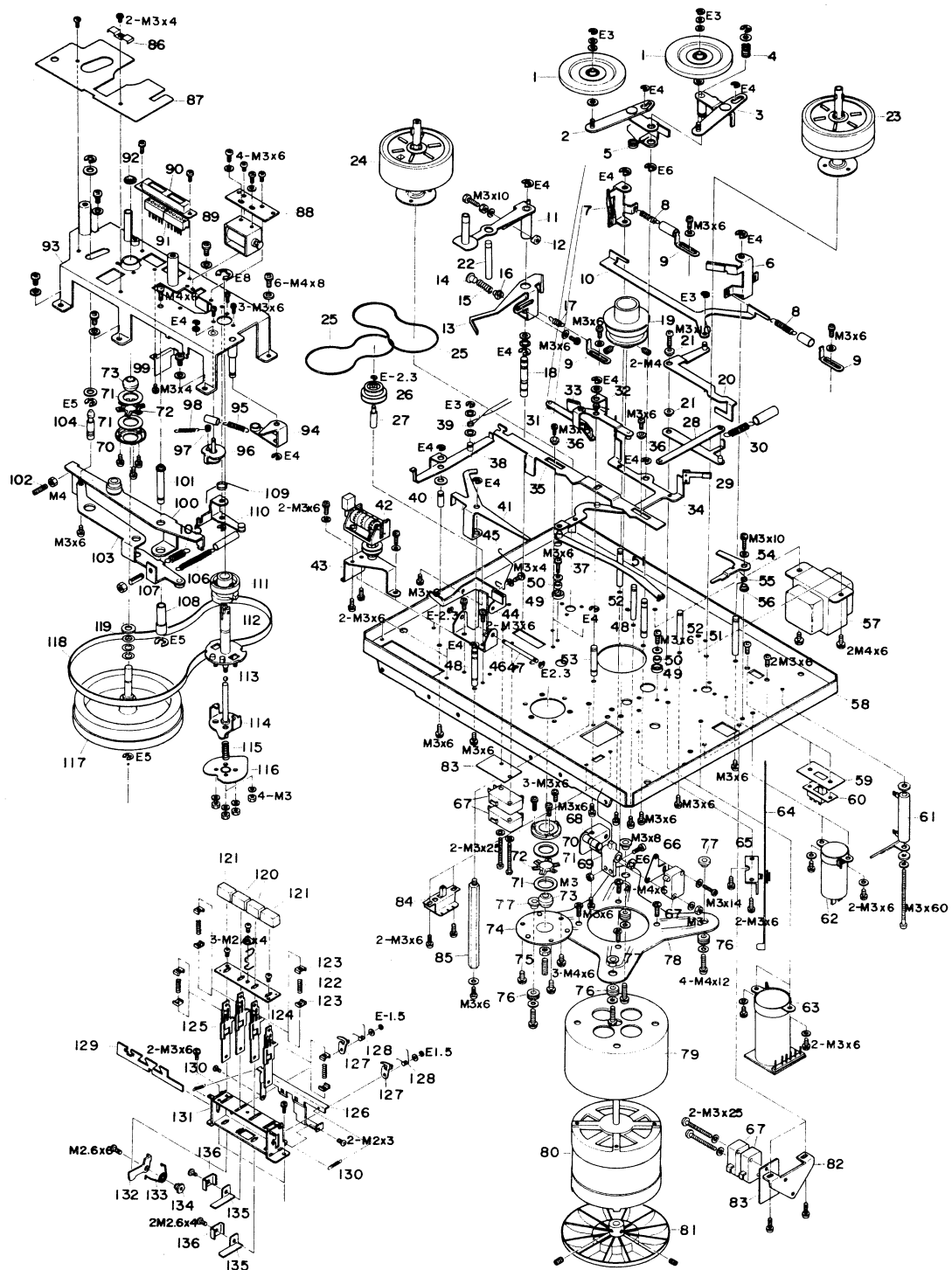


TRIM PARTS

CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
1- 1	50135700	Screw, Head Housing Plate		
1- 2	50135691	Head Housing Plate		
1- 3		E Ring		
1- 4	50130630	Head Assy		
1- 5	50140200	Pinch Roller Assy		
1- 6	50841540	Control Lever Assy		
1- 7	50113461	Panel, Trim		
1- 8	50820091	Plate, Panel Rest A		
1- 9				
1-10				
1-11	50287850	Case, Wooden		
1-12	50287710	Back Board		

A-1300

9-0420



MAIN CHASSIS

REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
2- 1	50840970	Idler Assy		
2- 2	50840990	Idler Lever AC Assy		
2- 3	50841010	Idler Lever BC Assy		
2- 4	50841060	Spring, A, Idler Lever		
2- 5	50841070	Spring, B, Idler Lever		
2- 6	50840560	Brake Lever A Assy		
2- 7	50840580	Brake Lever B Assy		
2- 8	50840610	Spring, Brake Lever		
2- 9	50840620	Brake Lever Spring Retainer		
2-10	50840550	Brake Actuator Lever C		
2-11	50840250	Servo Lever B Assy		
2-12	50840800	Collar, Servo Brake Adjust		
2-13	50840720	Servo Lever A Assy		
2-14	50840810	Shoulder Washer, A, Brake Spring		
2-15	50840840	Spring, B, Servo Brake		
2-16	50840820	Shoulder Washer, B, Brake Spring		
2-17	50840830	Spring, B, Servo Brake		
2-18	50840860	Servo Lever Shaft		
2-19	50840340	Motor Pulley		
2-20	50840490	Brake Actuator Lever B		
2-21	50840880	Operate Lever Shaft		
2-22	50840090	Servo Lever Stopper		
2-23	50840390	Take-up Pulley, Assy, R		
2-24	50840460	Take-up Pulley Assy, L		
2-25	50840210	Belt, Index Counter		
2-26	50840190	Counter Relay Pulley		
2-27	50840050	Relay Pulley Shaft		
2-28	50840480	Brake Actuator Lever A		
2-29	50840630	Brake Actuator Lever D		
2-30	50840530	Spring, Actuator Lever		
2-31	50840650	Flywheel Brake Lever A Assy		
2-32	50840670	Flywheel Brake Lever B Assy		
2-33	50823260	Spring, B, Flywheel		
2-34	50840940	Idler Actuator Lever Assy		
2-35	50840870	Operate Lever		
2-36	50840880	Shoulder Washer, Operate Lever		
2-37	50840930	Coupling Lever		
2-38	50841610	Push Button Lock Lever		
2-39	50840910	Spring, Lock Lever Coupling		
2-40	50841730	Lock Lever Shaft		
2-41	50840270	Pause Release Lever		
2-42	50585140	Index Counter		
2-43	50840200	Bracket, Counter Retainer		
2-44	50840240	Pause Lever		
2-45	50840260	Spring, Pause Lever		
2-46	50840250	Bracket, Pause Lever Retainer		
2-47	50840080	Pause Lever Shaft		
2-48	50840070	Release Lever Shaft		
2-49	50840890	Operate Lever Roller		
2-50	50840900	Operate Lever Roller Shaft		

PARTS LIST

A-1300

MAIN CHASSIS (CONTINUED)

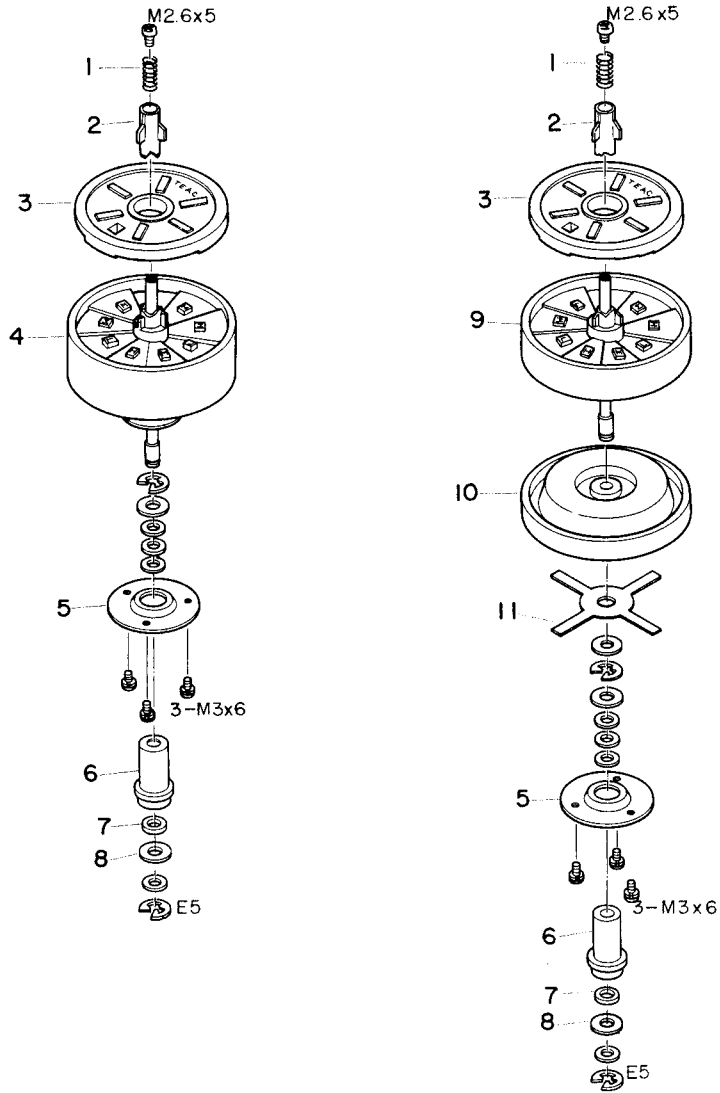
REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
2-51	50840070	Brake Lever Shaft		
2-52	50840060	Idler Guide Shaft		
2-53	50840040	Flywheel Brake Shaft		
2-54	50840540	Brake Release Lever		
2-55	50840510	Spring, Brake Release Lever		
2-56				
2-57	50561930	Transformer, Power		
2-58	50840020	Chassis, Main		
2-59	50840230	Insulate Plate, Freq.Selector SW		
2-60	50444080	SW, Slide, Freq.Selector SW		
2-61	50522170	Resistor, Wire Wound 330/10W		
2-62	50551330	Cap., Elec. 470/80V		
2-63	50547200	Cap., Motor Start 2.2+1/250V		
2-64	50841080	Fast Forward Lever		
2-65	50841090	Bracket, Fast Forward Lever Retainer		
2-66	50840110	Plate, A, Shut Off SW Mount		
2-67	50446130	SW, Micro, Shut Off		
2-68	50840120	Bracket, B, Shut Off SW Mount		
2-69	50840150	Shut Off SW Lever		
2-70	50823560	Metal Cover		
2-71	50823570	Felt Washer, Capstan		
2-72	50823580	Star Spring, Metal		
2-73	50820140	Capstan Metal		
2-74	50840300	Metal Retainer		
2-75	50823170	Screw, Capstan		
2-76	50820430	Rubber Cushion, Motor		
2-77	50840330	Shoulder Washer, Motor Mount Plate		
2-78	50840320	Plate, Motor Mount		
2-79	50040290	Motor Shield Case		
2-80	71021030	Motor		
2-81	50123980	Fan		
2-82	50840220	Plate, Operate SW		
2-83	50820080	Insulate Plate, Operate SW		
2-84	50444180	SW, Micro, Operate		
2-85	50241790	Stand Off, Back Plate Mount		
2-86	50841500	Clamp, Cable		
2-87	50040360	Shield Plate, Head		
2-88	50841530	Plate, Solenoid Mount		
2-89	50616560	Solenoid		
2-90	50841490	Connector, Cover		
2-91	50432780	Connector, Head, Female 5p (White)		
	50432790	Connector, Head, Female 5p (Red)		
2-92	50823190	Rubber Oil Seal		
2-93	50841110	Head Base Plate		
2-94	50841360	Return Lever		
2-95	50841390	Spring, Return Lever		
2-96	50825250	Safety Plate		
2-97	50823410	Roller, Safety Plate		
2-98	50823420	Spring, Safety Plate		
2-99	50841510	Shield Plate, A, Head Connector		

MAIN CHASSIS (CONTINUED)

REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
2-100	50841430	Pinch Roller Lever B		
2-101	50841480	Pinch Roller Lever Shaft		
2-102				
2-103	50841400	Pinch Roller Lever A		
2-104	50841420	Tape Guide, Head Pressure		
2-105	50821220	Spring, Pinch Roller Lever A		
2-106	50841450	Spring, Pinch Roller Lever B		
2-107	50824080	Screw, Pinch Roller Adjust		
2-108	50841470	Collar, Pinch Roller Lever		
2-109	50841350	Spring, Click Lever		
2-110	50841330	Click Lever		
2-111	50824600	Control Cam Bush		
2-112	50841260	Control Cam C		
2-113	50821490	Ball 4 ϕ		
2-114	50841240	Control Cam B		
2-115	50822711	Spring, Take-up Lever Pressure		
2-116	50841200	Control Cam A		
2-117	50840280	Flywheel Assy		
2-118	50840310	Belt, Capstan		
2-119	50823610	Washer, Capstan Thrust		
2-120	50253591	Push Button, Red		
2-121	50253601	Push Button, Black		
2-122	50841660	Spring, Push Button		
2-123	50841640	Push Button Spring Retainer		
2-124	50841630	Plate, Push Button		
2-125	50841560	Push Button Lever		
2-126	50841690	Lock Lever A		
2-127	50841700	Lock Lever B		
2-128	50841600	Spring, Lock Lever B		
2-129	50841650	Push Button Limiter		
2-130	50841750	Spring, Lock Lever A		
2-131	50841570	Push Button Base Plate		
2-132	50841760	SW Push Lever		
2-133	50841780	Spring, SW Push Lever		
2-134	50841770	SW Push Lever Shaft		
2-135	50841590	Flat Spring, Push Button		
2-136	50841790	Flat Spring Retainer		

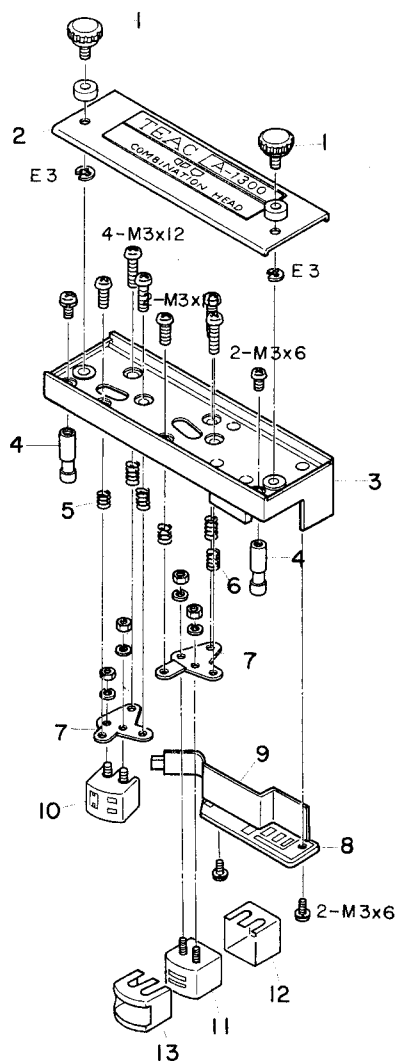
EXPLODED VIEW
PARTS LIST
A-1300

TAKE UP PULLEY



REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
3- 1	50840360	Spring, Reel Cap		
3- 2	50840350	Reel Cap		
3- 3	50840370	Reel Sheet		
3- 4	50840470	Take-up Pulley Assy, L		
3- 5	50824290	Bearing Cover		
3- 6	50840380	Reel Shaft Bearing		
3- 7	50824300	Felt Washer, Take-up Idler		
3- 8	50824310	Washer, Nylon, Take-up Idler		
3- 9	50840400	Take-up Pulley, R		
3-10	50840430	Slip Ring		
3-11	50840440	Star Spring, Slip Ring Retainer		

HEAD ASSY

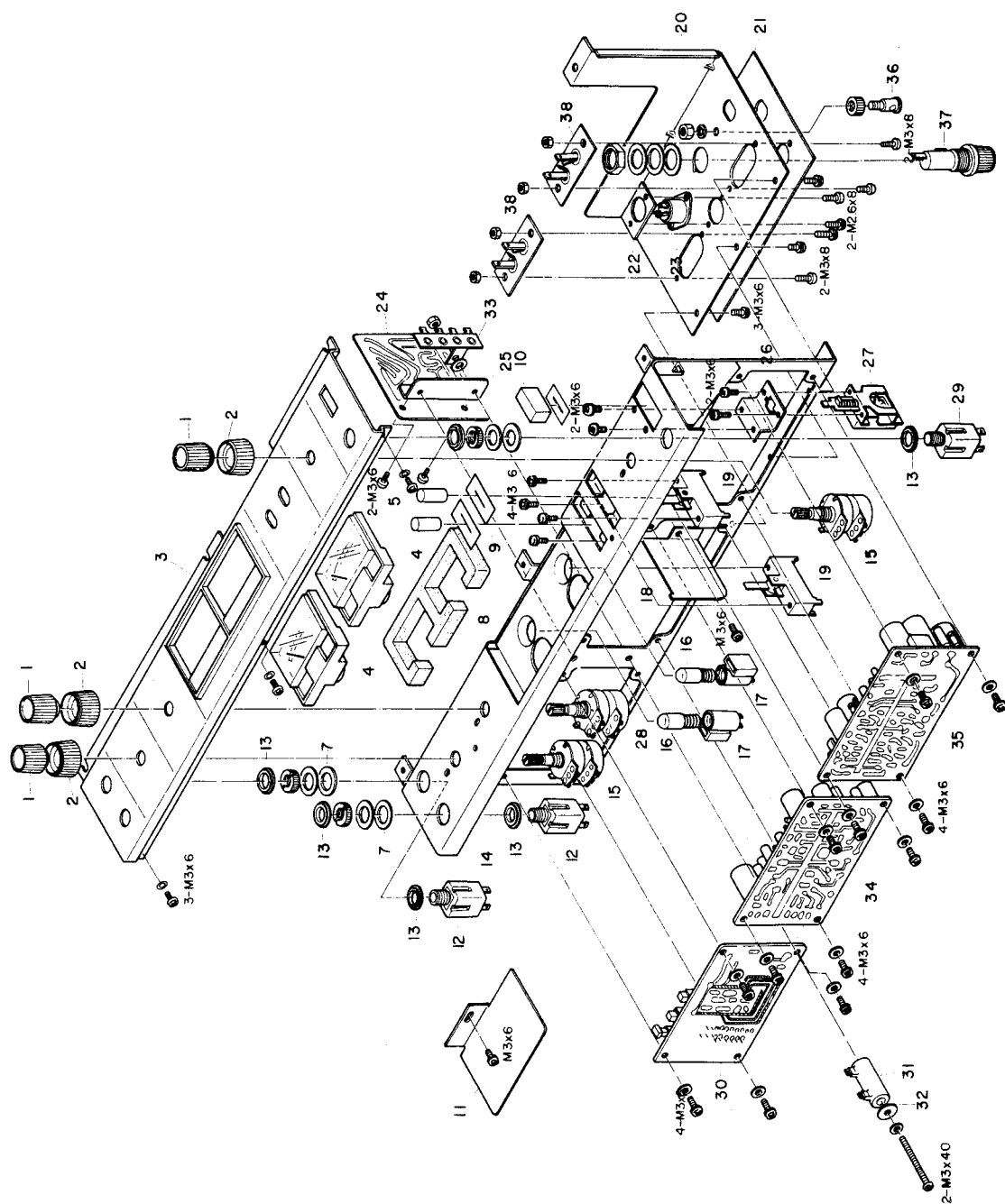


REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
4- 1	50135700	Screw, Head Housing plate		
	50135710	Screw Cushion		
4- 2	50135691	Head Housing Plate		
4- 3	50841151	Head Housing		
4- 4	50820930	Tape Guide, A		
4- 5	50841170	Spring, D, Head Mount		
4- 6	50823280	Spring, C, Head Mount		
4- 7	50841160	Head Mount Plate		
4- 8	50489520	PC Board, Head Terminal		
4- 9	50841810	Shield Plate, Head Connector		
4-10	50669041	Head, Playback		
4-11	50663430	Head, Erase/Rec		
4-12	50133900	Head Shield Case, B		
4-13	50134130	Head Shield Case, A		

EXPLODED VIEW

A-1300

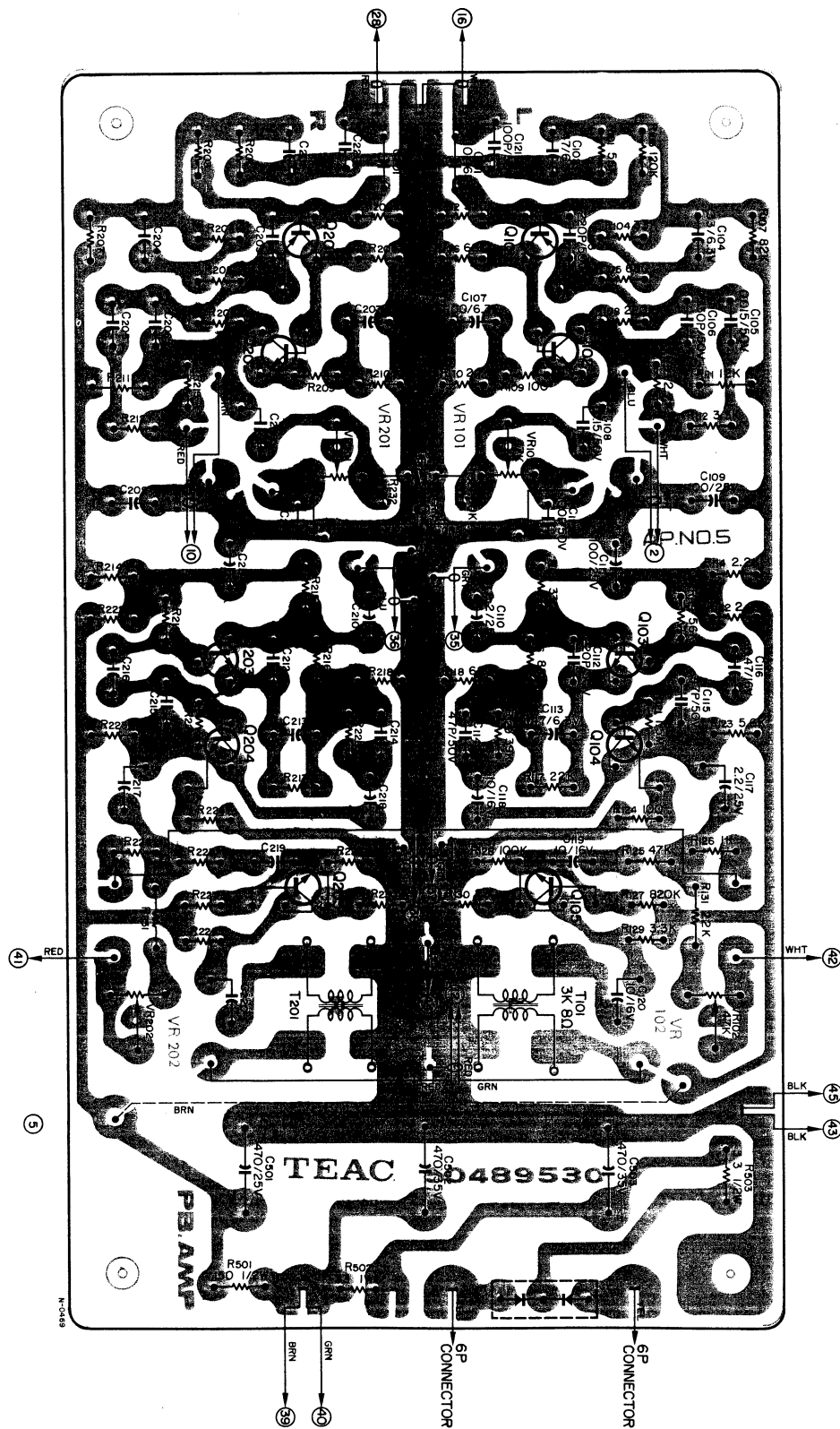
PREAMPLIFIER



PREAMPLIFIER

REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
5- 1	50253581	Knob, Inner		
5- 2	50253571	Knob, Outer		
5- 3	50113490	Panel, Amp Trim		
5- 4	50581330	VU Meter		
5- 5	50253440	Knob, Lever		
5- 6	50272610	Insulate Washer, A		
5- 7	50230560	Insulate Washer, Fiber		
5- 8	50279840	Meter Cushion		
5- 9	50330080	Sheet, SW Protector		
5-10	50253530	Push Button, Square, Power SW		
5-11	50235480	Shield Plate, Mic		
5-12	50430230	Jack, Mic 2 cond		
5-13	50272620	Insulate Washer, B		
5-14	50235380	Chassis Assy, Amp		
5-15	50535200	Potentiometer, Dual 50Kx2		
5-16	50414131	Lamp, 8V, VU Meter		
5-17	50431140	Socket, Lamp		
5-18	50235470	Shield Plate, SW		
5-19	50937580	SW, Lever		
5-20	50235491	Plate, Back		
5-21	50265011	Connector Plate (Domestic Only)		
	50265030	Connector Plate (Export Only)		
5-22	50233530	DIN Connector Holder		
5-23	50430010	Connector, DIN		
5-24	50489591	PC Board Assy, Osc		
5-25	50233800	Angle, Osc Mount		
5-26	50235461	Plate, Power SW Mount		
5-27	50443210	SW, Push, Power		
5-28	50535210	Potentiometer, Dual, Output 20Kx2		
5-29	50432440	Jack, Headphone 3 cond		
5-30	50489580	PC Board Assy, Bias Adjust		
5-31	50524260	Resistor, Wire Wound 450/5W		
5-32		Insulate Washer, 3.5 ϕ x8 ϕ x1t		
5-33	50330620	Sheet, D,, SW Protector		
5-				
5-33	50330620	Sheet, D, SW Protector		
5-34	50489570	PC Board Assy, Rec Amp		
5-35	50489560	PC Board Assy, Playback Amp		
5-36	50454071	GND Terminal		
5-37	50412170	Fuse Holder		
5-38	50434631	Pin Jack, US 2P		

PLAYBACK AMPLIFIER



PRINTED CIRCUIT BOARD AND PARTS LIST

MODEL A-1300

PLAYBACK AMPLIFIER

CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
5-35	50489560	PC Board Assy, Playback Amp		
	50489530	PC Board, Playback Amp		
T101/102	50562260	Transformer, Output 3k:8		
SILICON TRANSISTORS				
Q101/201	50424210	2SA666-I(S)	50424280	
			23A666-I(T)	
Q102/202	50423770	2SC644(T)		
Q103/203	50423770	2SC644(T)		
Q104/204	50424230	2SC828(T)		
Q105/205	50424220	2SC828(S)		
or	50424230	2SC828(T)		
DIODE				
Se101	50422260	Silicon Stack SIB02-C01		
CARBON RESISTORS				
ALL RESISTORS IN OHMS, 10% TOLERANCE, 1/4 WATTS AND FIXED CARBON FILM TYPE UNLESS OTHERWISE NOTED.				
R101/201	50515610	56k		
R102/202	50515710	330k		
R103/203	50515650	120k		
R104/204	50515570	33k		
R105/205	50515320	680		
R106/206	50515620	68k		
R107/207	50515630	82k		
R108/208	50515680	220k		
R109/209	50515220	100		
R110/210	50515400	2.7k		
R111/211	50515500	12k		
R112/212	50515410	3.3k		
R113/213	50515380	2.2k		
R114/214	50515380	2.2k		
			50515400	
			2.7k	
R115/215	50515710	330k		
R116/216	50515630	82k		
R117/217	50515540	22k		
R118/218	50515320	680		
R119/219	50515610	56k		
R120/220	50515580	39k		
R121/221	50513640	1.5M		
R122/222	50515380	2.2k		
R123/223	50515460	5.6k		
R124/224	50515220	100		

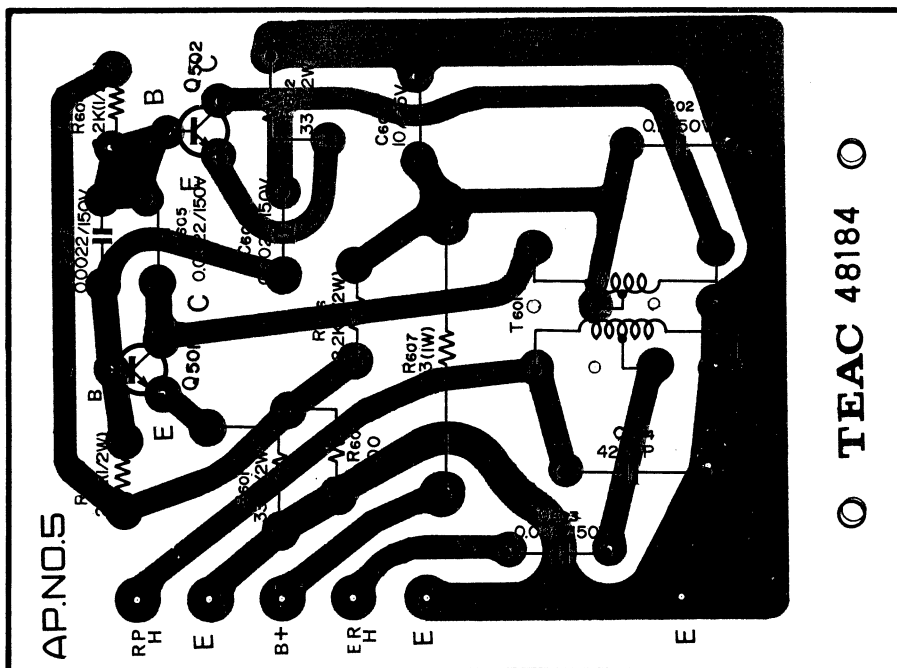
PARTS LIST

A-1300

PLAYBACK AMPLIFIER (CONTINUED)

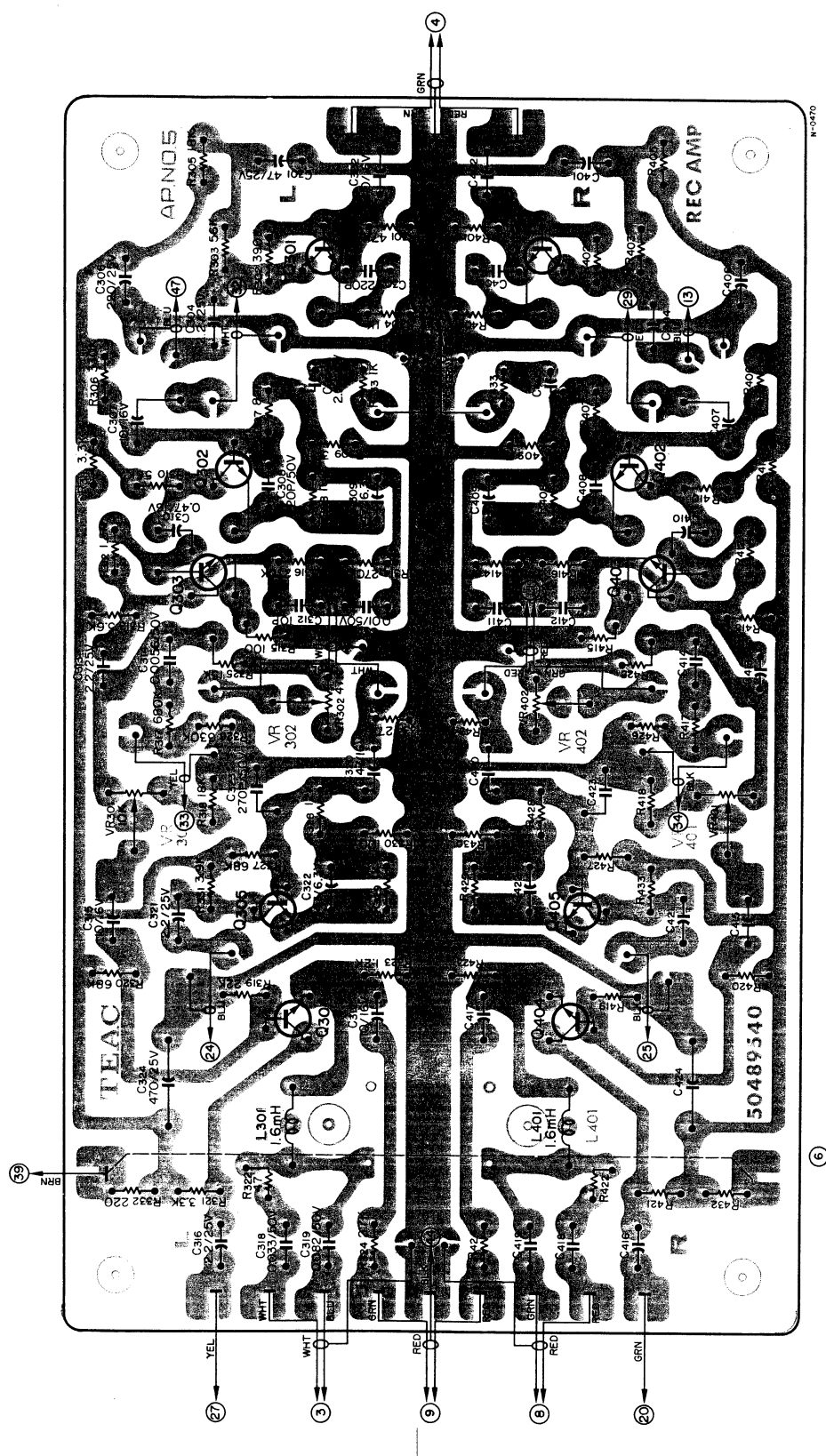
CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
R125/225	50515590	47k		
R126/226	50515340	1k		
R127/227	50515770	820k		
R128/228	50515640	100k		
R129/229	50515410	3.3k		
R130/230	50515260	220		
R131/231	50515540	22k		
R132/232	50515640	100k		
R501	50516240	150 1/2W		
R502	50526050	Wire Wound 33 2W		
R503	50525440	Wire Wound 3.3 1W		
TRIMMER RESISTOR				
VR101/201	50533520	47k (B) Playback EQ. Adjustable		
CAPACITORS				
ALL CAPACITORS IN MICRO FARADS UNLESS OTHERWISE NOTED.				
C101/201	50554050	Elec. 10/16V		
C102/202	50554820	Elec. 47/6.3V		
C103/203	50543650	Polyst. 220p/50V		
C104/204	50554240	Elec. 33/6.3V		
C105/205	50548870	Mylar 0.015/50V		
C106/206	50543670	Polyst. 330p/50V		
C107/207	50554230	Elec. 100/6.3V		
C108/208	50548310	Mylar 0.15/50V		
C109/209	50554170	Elec. 100/25V		
C110/210	50554940	Elec. 2.2/25V		
C111/211	50554170	Elec. 100/25V		
C112/212	50543650	Polyst. 220p/50V		
C113/213	50554820	Elec. 47/6.3V		
C114/214	50544110	Mica 47p/50V		
C115/215	50544110	Mica 47p/50V		
C116/216	50549650	Elec. 0.47/25V		
C117/217	50554940	Elec. 2.2/25V		
C118/218	50554050	Elec. 10/16V		
C119/219	50554050	Elec. 10/16V		
C120/220	50554050	Elec. 10/16V		
C121/221	50543610	Polyst. 100p/50V		
C122/222	50543610	Polyst. 100p/50V		
C501	50554420	Elec. 470/25V		
C502-503	50554620	Elec. 470/35V		

BIAS OSCILLATOR ASSY



CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
5-24	50489591 50481840	PC Board Assy, Osc. PC Board, Oscillator		
		SILICON TRANSISTORS		
Q501/502	50423880	2SC971 (YBL)		
		RESISTORS		
R601-602	50515150	Carbon 33 ohm 1/4W		
R603	50515220	Carbon 100 ohm 1/4W		
R604-606	50515380	Carbon 2.2k ohm 1/4W		
R607	50527070	Metal Oxide Film 33 ohm 1W		
		CAPACITORS		
C601	50554180	Elec. 10uF 25V		
C602	50548040	Mylar 0.1uF 50V		
C603	50548740	Mylar 0.022uF 150V		
C604	50544040	Mica 4200pF 25V		
C605	50548210	Mylar 0.0022uF 150V		
		COIL		
T601	50563121	Oscillator		

RECORD AMPLIFIER



PARTS LIST
A-1300

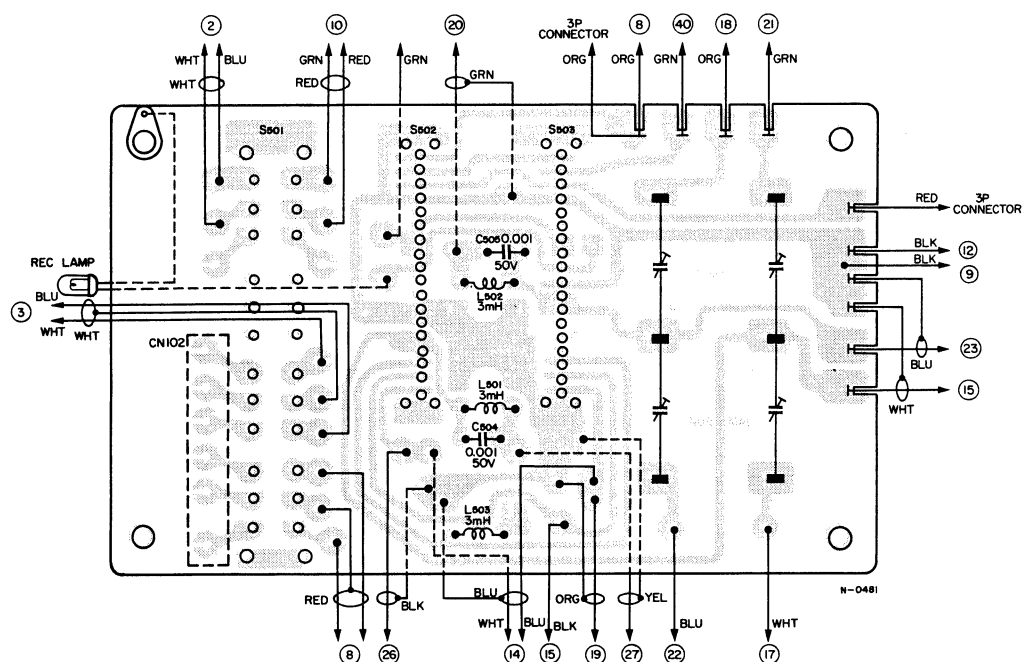
RECORD AMPLIFIER (CONTINUED)

CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
R332/432	50515260	220		
R333/433	50515340	1k		
R334/434	50515560	27k		
TRIMMER RESISTORS				
VR301/401	50533580	10k (B) Record Level Calibration		
VR302/402	50533520	47k (B) Meter Calibration		
CAPACITORS				
ALL CAPACITORS IN MICRO FARADS UNLESS OTHERWISE NOTED.				
C301/401	50554490	Elec. 47/25V		
C302/402	50554050	Elec. 10/16V		
C303/403	50543420	Polyst. 220p/50V		
C304/404	50554940	Elec. 2.2/25V		
C305/405	50554940	Elec. 2.2/25V		
C306/406	50554180	Elec. 220/25V		
C307/407	50554050	Elec. 10/16V		
C308/408	50543420	Polyst. 220p/50V		
C309/409	50554820	Elec. 47/6.3V		
C310/410	50549650	Elec. 0.47/25V		
C311/411	50548770	Mylar 0.01/50V		
C312/412	50543550	Polyst. 10p/50V	50543310 High Q	
C313/413	50554940	Elec. 2.2/25V		
C314/414	50548920	Mylar 0.0056/50V		
C315/415	50554050	Elec. 10/16V		
C316/416	50554940	Elec. 2.2/25V		
C317/417	50554050	Elec. 10/16V		
C318/418	50549000	Mylar 0.033/50V		
C319/419	50549390	Mylar 0.082/50V		
C320/420	50549650	Elec. 0.47/25V		
C321/421	50554940	Elec. 2.2/25V		
C322/422	50554820	Elec. 47/6.3V		
C323/423	50543080	Polyst. 270p/250V		
C324/424	50554420	Elec. 470/25V		

RECORD AMPLIFIER

CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
5-34	50489570	PC Board Assy, Rec Amp		
	50489540	PC Board, Rec Amp		
SILICON TRANSISTORS				
Q301/401	50423770	2SC644(T)		
Q302/402	50423770	2SC644(T)		
Q303/403	50424230	2SC828(T)		
Q304/404	50423620	2SC828(R)		
or	50424220	2SC828(S)		
Q305/405	50424230	2SC828(T)		
COIL				
L301/401	50566540	1.6mH Rec Compensation		
CARBON RESISTORS				
R301/401	50515590	47k		
R302/402	50515720	390k		
R303/403	50515610	56k		
R304/404	50515340	1k		
R305/405	50515520	18k		
R306/406	50515710	330k		
R307/407	50515630	82k		
R308/408	50515520	18k		
R309/409	50515410	3.3k		
R310/410	50515610	56k		
R311/411	50515410	3.3k		
R312/412	50513640	1.5M		
R313/413	50515460	5.6k		
R314/414	50515700	270k		
R315/415	50515220	100		
R316/416	50515700	270k		
R317/417	50515760	680k		
R318/418	50515520	18k		
R319/419	50515540	22k		
R320/420	50515620	68k		
R321/421	50515410	3.3k		
R322/422	50515170	47		
R323/423	50515350	1.2k		
R324/424	50515400	2.7k		
R325/425	50515510	15k		
R326/426	50515570	330k		
R327/427	50515620	68k		
R328/428	50515500	12k		
R329/429	50515340	1k		
R330/430	50515220	100		
R331/431	50515430	3.9k		

BIAS ADJUST ASSY



CIRCUIT REF NO.	TEAC PARTS NO.	DESCRIPTION	1ST	2ND
5-30	50489580	PC Board Assy, Bias Adjust		
	50489501	PC Board, Bias Adjust		
L501/502	50566300	Coil, 3mH Bias Trap		
L503	50566300	Coil, 3mH Dummy Load		
S501	50444350	SW, Slide, Speed Selector		
S502/503	50444360	SW, Slide, Rec Selector		
PC101/103	50547070	Cap., Trimmer 10 - 80pF		
PC102/104	50547070	Cap., Trimmer 10 - 80pF		
C504/505	50547600	Cap., Mylar 0.001/50V		
CN102	50436400	Plug, Miniature 6P		

SCHEMATIC DIAGRAM
A-1300

TEAC A-1300 SCHEMATIC DIAGRAM

